A WELL-BELOVED ROYAL LADY: A SIXTIETH BIRTHDAY PORTRAIT OF QUEEN ELIZABETH THE QUEEN MOTHER.

This delightful photograph of Her Majesty Queen Elizabeth the Queen Mother was taken for her sixtieth birthday, which she celebrated on August 4. In this photograph, full of dignity and charm, the Queen Mother is seen in the beautiful gardens of Clarence House. She is wearing a blue and white lace dress with a tulle-and-flower hat to match, and a platinum mink stole.

Photograph by Studio Lisa, Ltd.

A GREAT BRITISH ENGINEERING ACHIEVEMENT AS IT WILL APPEAR WHEN COMPLETED

"THE FIRST BRIDGE OVER THE RIVER FORTH": A FINE LANDSCAPE BY JOSEPH FARINGTON, R.A. (1747-1821), OF A PRIMITIVE BRIDGE NEAR THE SOURCE OF THE RIVER FORTH.

SPANNING the waters of the Firth of Forth in Scotland is the famous seventy-year-old railway bridge across which, day and night, trains run to and from the North. This bridge, unrivalled in magnitude for many years, is still rightly considered one of the great wonders of civil engineering. There is now being constructed by British engineers a great road bridge fittingly within sight of the railway bridge. The new bridge will be exceeded in span only by three other bridges (all in the U.S.A.). The main span will be 3300 ft.—twice that of the great British-built arch over Sydney Harbour—and the two side spans 1340 ft. each. The steel towers will rise over 500 ft. above the water and carry a pair of 24 in.-diameter high tensile steel cables which will be securely anchored in deep tunnels in the rock on each shore. There will be dual carriage-ways each 24 ft. wide, two 9-ft. cycle tracks and two 6-ft. footpaths which will be carried on a grid of steel beams and girders slung from the main cables by steel ropes spaced at intervals of 60 ft. The long and often difficult work of constructing the foundations, some of which go to a depth of 120 ft. below high tide, and calling for much skill and judgment in their construction, is now nearly complete. The erection of the steel towers has been commenced and next year the main cables are planned to be completed. It is of interest to note that whereas the railway bridge was designed on the "cantilever" principle and the huge braced girders were erected piece by piece starting from each of the main supports, the main carrying elements of the new bridge, that is, the cables, are designed to carry the weight of the bridge and traffic by virtue of the predetermined looped shape which they take up, as the 12,000 odd, 0.2 in. diameter, wires of which each cable is made are taken, a few at a time, the full distance between the anchorages on each shore. The form

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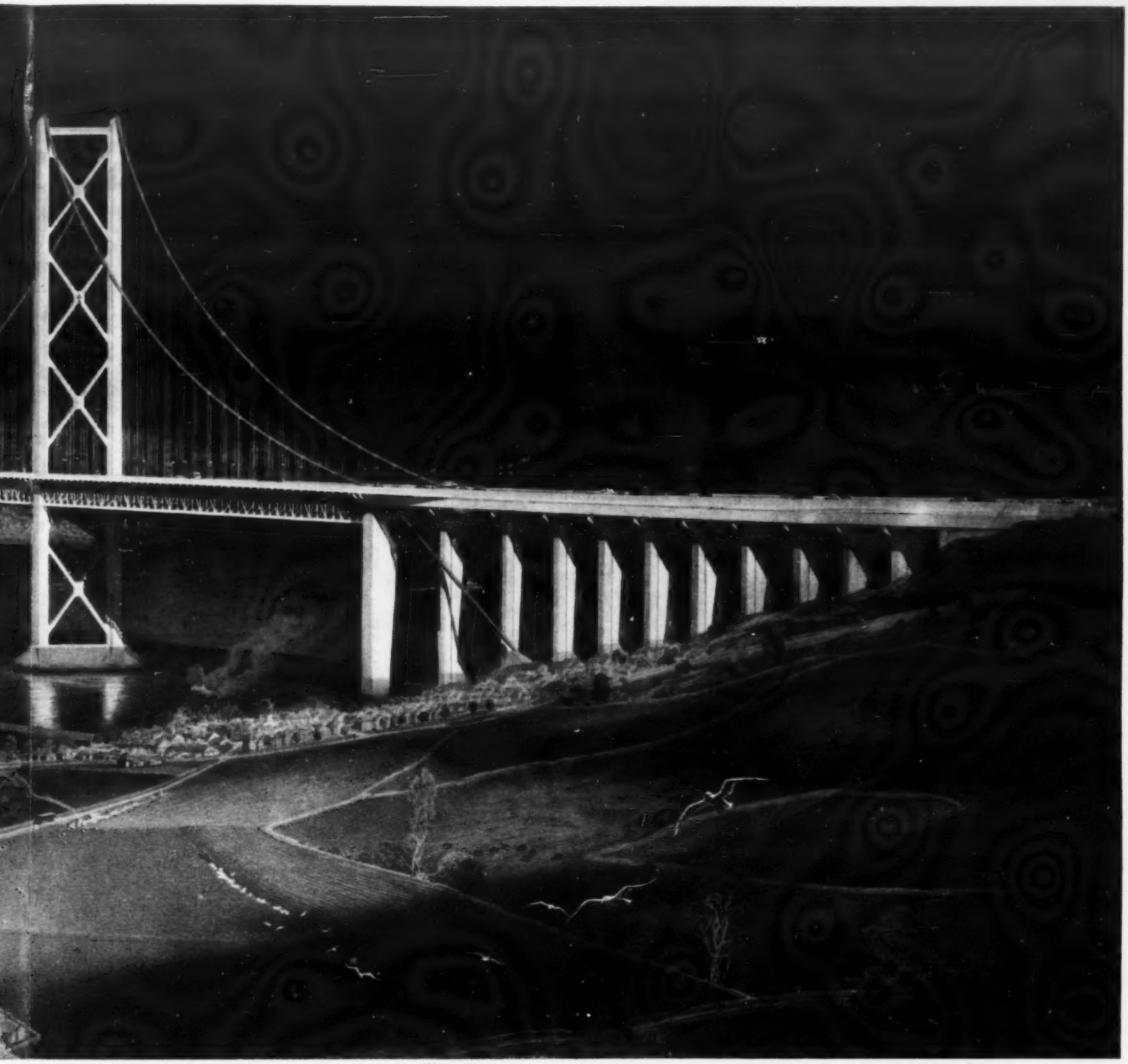
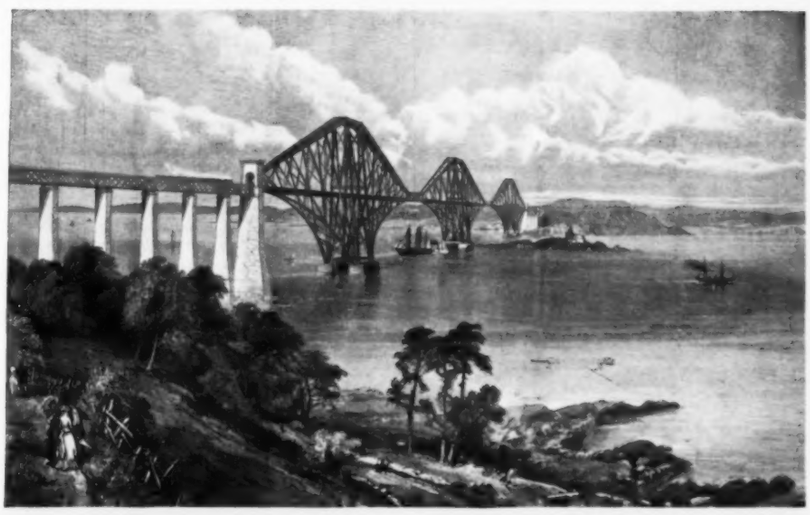
From a painting by A. C. Webb, and reproduced by courtesy of the consult



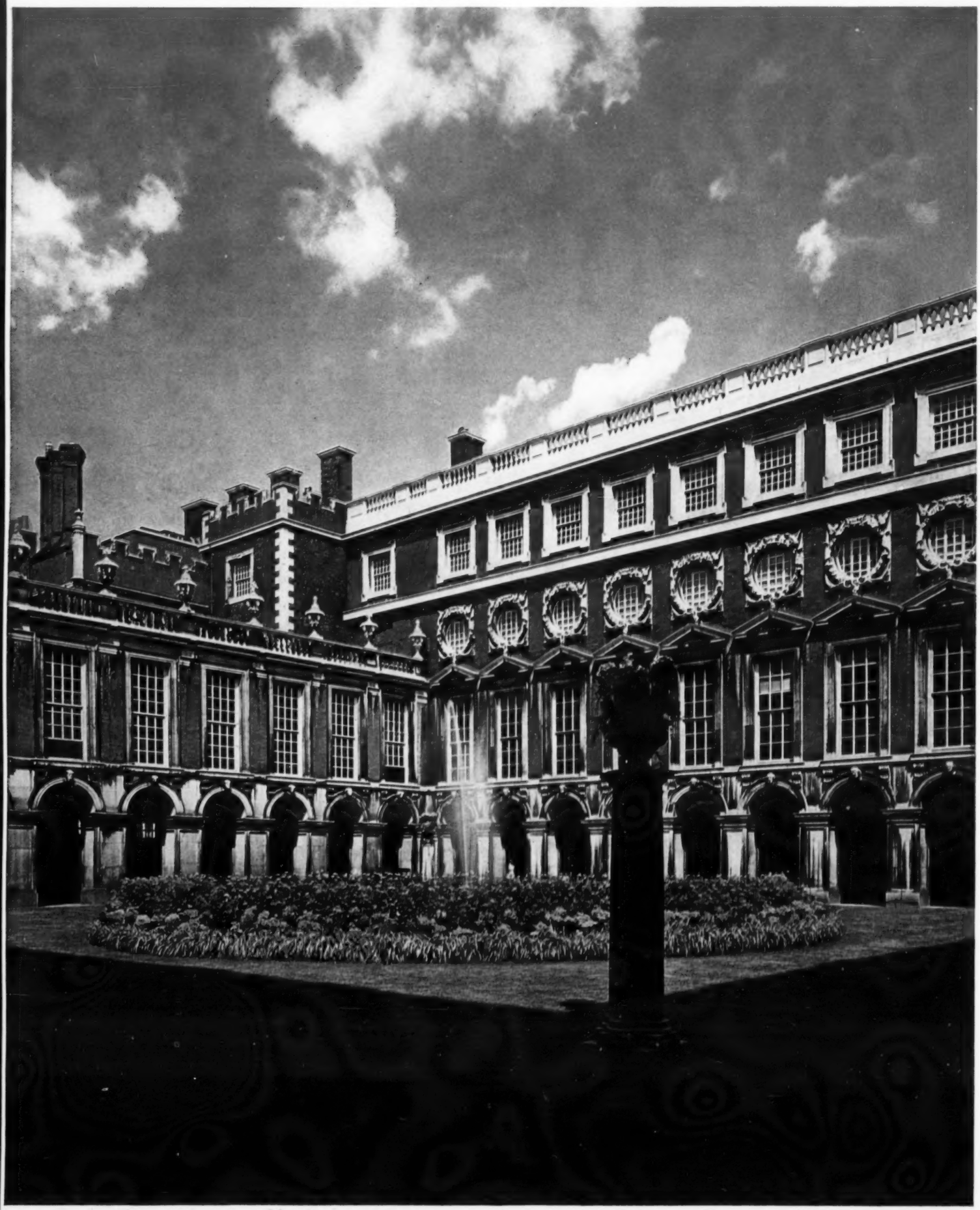
MPLETED: THE MIGHTY FIRTH OF FORTH ROAD BRIDGE—NOW BEING CONSTRUCTED.

of the main cables will be maintained under varying conditions of loading by traffic by the deep braced stiffening girders below the roadway which are clearly visible in the picture. These girders, together with bracing between them and the cables themselves, have been designed in such a way as to ensure that not only can any possible wind pressure be resisted, but that there will be no build-up of oscillations due to "aerodynamic" interaction of structure and wind whatever the velocity of the latter may be. A few more facts may help in giving an idea of the size of this great structure. The massive reinforced concrete towers standing on the shores at the ends of the side spans and already completed are as high as Nelson's Column and are over a mile apart. The maximum tension in each of the main cables will be about 14,000 tons, which they will be able to bear with a large factor of safety. As in all large span bridges the greater part of the load which the main elements have to bear comes from the weight of the structure itself, the Forth Road Bridge being no exception in spite of the fact that the strength of the steel in the cables is more than three times that of the steel used for the girders of the railway bridge. The viaducts at each end of the bridge will be in concrete and steel and will be joined to new roads which in turn will connect to the existing road systems on each side of the Firth. The bridge itself will cost about £11,000,000 and the whole scheme about £16,000,000. The contractors are the A.C.D. Bridge Co.—a consortium of Sir William Arrol & Co., Ltd., The Cleveland Bridge and Engineering Co., Ltd., and Dorman Long (Bridge and Engineering) Ltd. The consulting engineers for this great enterprise are Mott, Hay and Anderson associated with Freeman Fox and Partners. The consulting architect was the late Sir Giles Gilbert Scott.

sy of the consulting engineers for the bridge, Mott, Hay and Anderson.



THE FORTH RAILWAY BRIDGE AT QUEENSFERRY, SEEN FROM THE SOUTH SHORE: A DRAWING FROM *THE ILLUSTRATED LONDON NEWS* OF OCTOBER 19, 1889, THE YEAR IN WHICH THE BRIDGE WAS OPENED.



SUNSHINE AND SHADOW, FLOWERS AND FALLING WATER, AND THE ELEGANCE OF WREN'S FOUNTAIN COURT AT HAMPTON COURT.

This court, which is the third *en suite* from the Great Gatehouse of Hampton Court, lies behind the southern Wren façade; and this view is taken from the south-east corner, the lower range on the left being the Communication Gallery. But for the outbreak of war with France in 1701, much more of the Tudor Palace would have been pulled down and rebuilt in the French style by Wren—a turn of events to be deplored or welcomed according to one's taste in architecture. In the Tudor buildings behind the far corner runs the Haunted Gallery, down which Catharine Howard, Henry VIII's fifth queen, ran towards the Chapel to beg mercy and forgiveness of her infidelity from the King who was hearing Mass there. The guards seized her and she was dragged back to a captivity which was to end three months later on the block at Tower Green. Her ghost is said still to be seen and heard running down the gallery.

From a colour photograph specially taken for "The Illustrated London News" by A. F. Kersting, F.R.P.S.